

REMARKS

Reconsideration and allowance of the present application are respectfully requested. Claims 11-18 and 20-27 remain pending in the application. Claims 1-10 and 19 were previously canceled. Of the pending claims, claims 11, 22 and 27 remain independent. Claim 20 has also been rewritten as an independent claim.

During Examiner telephone conferences in August, 2003, it was agreed that with minor modifications to claims 22 and 27, the application would be in condition for allowance. The amendments discussed were intended to address formalities in claims 22 and 27. By the foregoing amendment, the amendments discussed at that time have been introduced to the claims.

In the most recent Office Action, the Examiner has indicated allowable subject matter in numbered paragraph 7 of the Office Action. This portion of the Office Action indicates that claims 20-21, 23 and 25 contain allowable subject matter. By the foregoing amendment, claim 20 has been rewritten into independent form and is considered allowable.

However, the Examiner has apparently reconsidered allowance of independent claims 11, 22 and 27 based on newly cited U.S. Patent No. 5,324,142 (Haig). Independent claims 11, 22 and 27 have been amended to include features which are neither taught nor

suggested by the documents relied upon by the Examiner. As such, independent claims 11, 22 and 27 are also considered allowable.

Each of the points raised in the Office Action will be addressed in turn. On page 2 of the Office Action, in numbered paragraph 2, claims 20-25 and 27 are rejected under 35 U.S.C. §112, second paragraph. These objections have been addressed by amendments to claims 22 and 27 which were discussed with the Examiner in August. More particularly, claim 22 has been amended to recite the phrase "in the dosed fashion", and claim 27 has been amended to recite an "outlet means". Accordingly, withdrawal of the objections raised by the Examiner in this portion of the Office Action, is requested.

In numbered paragraph 4 of the Office Action, claims 22, 24 and 27 are rejected under 35 U.S.C. §102(b) as being anticipated by the newly cited Haig patent. In numbered paragraph 6 on page 5 of the Office Action, claims 11-18 and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over the Haig patent in combination with the previously cited U.S. Patent No. 4,125,063 (Jelks).

These rejections are respectfully traversed because the Haig patent, considered individually or in combination with the Jelks patent in the manner relied upon by the Examiner, fails to teach or suggest Applicants' invention as set forth in independent claims 11, 22 and 27.

The present invention is generally directed to a method and apparatus for driving a vertical mixer, such as the mixer 1 in Applicants' Figure 1. In the exemplary Figure 1 embodiment, the vertical mixer 1 includes rotatable mixing tools 4 provided in a housing 6

having an inlet 7 for receiving a product to be mixed, an outlet 8, and a drive 13 for driving a shaft 2 to which the mixing tools 4 are attached. The vertical mixer is completely filled in an operating state, and a shear field builds up in the product by the mixing tool. The ability to completely fill the vertical mixer is achieved, at least in part, through the provision of the relatively narrow inlet 7, located off center with respect to the shaft 2. The exemplary embodiment further allows for at least one additional input, such as the addition points 10, located between the inlet 7 and the outlet 8 for supplying an additive, such as gases, liquids and/or pasty products (see specification page 5, last paragraph) to be mixed by the mixing tool.

As described in the last paragraph on specification page 2, an inner area of the mixer can be completely filled during an operating state. The mixing product enters the region of the mixing tools and is set in rotary motion and pressed towards the inner wall of the mixer housing. The mixing tools provided in the housing are configured for building up a shear field in the product during such an operating state. The complete filling of the housing via the element 7 and the additional inputs 10, in conjunction with the provision of the mixing tool, allows the shear field to occur within the housing. As a result, significant advantages can be realized, such as optimal mixing with minimum energy as described in the last full paragraph on specification page 1.

Applicants' Figure 2 embodiment further illustrates a lower part of an exemplary mixer, wherein a rotary slide valve 9 is provided for opening or closing an opening of the outlet 14. Above the opening 14 is provided an intermediate floor 15 inside the housing 6,

which can block off opening 14. In an exemplary embodiment, the additional inputs, such as the additional points 10, are located between the inlet and the intermediate floor 15.

The foregoing features are broadly encompassed by Applicants' independent claims 11, 22 and 27, and are neither taught nor suggested by the Haig and Jelks patent, even when these patents are considered in the combination relied upon by the Examiner.

The newly cited Haig patent is directed to a powder dispensing apparatus. Referring to Figure 1 of this patent, a stationary member 1 and a rotatable member 2 are illustrated. A conical member 27 is secured to the top of the rotatable member. The stationary member 1 is configured as a hopper with a wide open inlet. This wide inlet configuration provides an openness of the stationary member 1 which teaches away from a complete filling of the stationary member 1 because such filling would result in spillage from the stationary member 1. Moreover, the openness of the stationary member 1 teaches away from any provision of inlet ports for heating the material, as heat would easily escape through the open top of the stationary member 1.

In addition to the openness of the inlet, material is discharged from the stationary member 1 of Haig via a narrow baseplate aperture 10 into a conduit 11. A port 9 is provided for a high-speed gas stream in the direction of conduit 11 to blow material through the baseplate aperture 10 into the conduit 11. The provision of such a port at the baseplate aperture 10 also teaches away from completely filling the stationary member 1 because an airstream from port 9 can force some material upward and out of the stationary member 1.

The Haig patent does not teach or suggest Applicants' invention as presently set forth in independent claims 11, 22 and 27. For example, claim 11 is directed to a method for driving a vertical mixer with at least one rotatable mixing tool provided in the housing, with at least one inlet for a product to be mixed, with at least one outlet and at least one drive. Claim 11 comprises **continuously completely filling** the vertical member in an operating state. As mentioned, the Haig patent teaches away from any continuous complete filling of stationary member 1 because to do so would promote spillage from the stationary member 1. In addition, claim 11 recites, among other features, that the filling of the vertical mixer includes supplying an additive to the product at an input located **between the inlet and the outlet**. The Haig patent, at best, teaches use of port 9 for introducing air during the discharge of material at the outlet from the stationary member 1. The port 9 does not constitute an input for supplying an additive at a location between an inlet and an outlet of the stationary member; that is, port 9 is not located between the wide inlet and the baseplate aperture 10 for mixing with the product by a mixing tool in the stationary member.

As such, claim 11 is considered allowable over the Haig patent.

Claim 22 is directed to a device for driving a vertical mixer which includes, among other features, an outlet for regulating flow of a primary product in a dosed fashion when continuous product flow is established from the inlet to the outlet. Claim 22 also recites an intermediate floor provided with an opening, whereby the intermediate floor blocks off a cross section of an opening of an outlet in the housing floor. Claim 22 also recites at least

one additional input located between the inlet and the intermediate floor for supplying an additive to the product to be mixed by the mixing tool. Such features are neither taught nor suggested by the Haig patent.

Claim 27 is directed to a device for driving a vertical mixer which, in a manner similar to that discussed with respect to claim 22, recites at least one outlet means for regulating flow of a primary product in a dosed fashion when continuous product flow is established from the inlet to the outlet. Claim 27 also recites at least one additional input located between the inlet and the outlet for supplying an additive to the product to be mixed by the rotatable mixing tool. As such, claim 27 is considered allowable over the Haig patent.

The Jelks patent, even when considered in combination with the Haig patent in the manner suggested by the Examiner, fails to overcome the deficiencies of the Haig patent. The Jelks patent is directed to a continuous digester having a conveyor 42 with a mill 48 and valve 54 at the outlet. An inlet means 18 is provided in a receiving box 16.

The lower portion of the receiving box communicates with a second screw feeder 20. Cellulosic matter falls by gravity to screw feeder 20 and is transported by screw member 24 to a mill 22. A reactor 30 is disposed below the mill and includes a housing 32 having a chamber 33. Arm sweeps 38 are secured to a shaft 35 within the chamber 33 to prevent bridging of the cellulosic material.

The lower portion of the reaction chamber communicates with a third screw conveyor 42 which feeds a second mill 48 with the discharge contents of the reactor 30.

Material is batch processed in the reactor for 30 minutes before being discharged, as described at column 3, lines 15-28. The material is then discharged through line 52 into a valve 44. Because material is batch processed, the Jelks patent fails to teach or suggest a continuous process, but rather is directed to performing repeated cycle time processing of material.

As such, the Jelks patent, even when considered with the Haig patent, fails to overcome the deficiencies described above with respect to the Haig patent. For example, features of the Jelks patent would not have been considered for combination with the Haig patent in the manner suggested by the Examiner. The Haig patent is directed to a wide input, open hopper stationary member 1 that communicates with a narrow outlet. In contrast, the Jelks patent is directed to providing a highly regulated, narrow dosed input (via inlet means 18 and groove feeder 20) and a wide outlet. The outlet of the Jelks digester interfaces with a screw or auger member 44. Thus, one skilled in the art would not look to features of the Jelks patent for combination with features of the Haig patent as the two systems operate in opposite means.

Moreover, even if features of these patents could have somehow been combined in the manner suggested by the Examiner, the presently claimed invention would not have resulted. The Jelks patent is directed to a cycle time processing method. As such, this patent does not overcome the deficiencies of the Haig patent in providing a **continuously** completely filling feature as presently claimed. In addition, the Jelks patent does not teach or suggest providing an additional input located between an inlet and intermediate floor or

outlet for supplying an additive to a product to be mixed by a mixing tool. As such, the Jelks patent fails to overcome the deficiencies of the Haig patent, and claims 11, 22 and 27 are allowable over these patents.

All of the remaining dependent claims recite features which are considered further distinguishable over the patents relied upon by the Examiner. As such, all remaining claims are considered allowable for reasons already discussed above with respect to independent claims 11, 22 and 27.

All objections and rejections in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance and a Notice of Allowance is respectfully solicited.

Respectfully submitted,

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